Cohomology of real toric manifolds arising from a graph

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Abstract: Given a simple graph G, there is a Delzant polytope PG, known as a graph associahedron, whose facets correspond to the proper connected induced subgraphs of G. Graph associahedra have been studied widely and are found in a broad range of subjects. S. Choi and H. Park introduced a new graph invariant, called a-number, and then compute the rational Betti numbers of the real toric manifold corresponding to the graph associahedron PG by using a-numbers. In this talk, we will introduce three kinds of Delzant polytopes arising from a simple graph which are different from PG, and then compute the rational Betti numbers of the real toric manifold corresponding to each of our Delzant polytopes. We also discuss the relationship between our results and the known results. This talk is based on joint work with B. Park and H. Park.